Can loyalty programs be effective in promoting integrated energy services? Evidence from Slovenian electricity consumers

Janez Dolšak*, Nevenka Hrovatin, Jelena Zorić

University of Ljubljana, Faculty of Economics, Kardeljeva pl. 17, 1000 Ljubljana, Slovenia

ABSTRACT

The transition of residential energy markets following liberalisation has enhanced the development of new marketing strategies in order to increase consumers' activity in the market, as well as to satisfy current climate change policies. This work explores the relationship between consumer preferences for energy services and participation in loyalty programs as a new marketing strategy in competitive energy markets. A conceptual framework of membership in loyalty program options is developed and empirically tested. In addition to consumer preferences for energy services extracted by principal component analysis, explanatory variables in the multinomial regression model also include other control variables. An empirical analysis is conducted on a sample of residential electricity consumers of the largest energy supplier in Slovenia, a new entrant in the electricity market. This research suggests three main findings. First, consumer preferences defining consumer types significantly differ across the loyalty program consumer groups, which calls for tailoring the supply offer to respond to different consumer segments. Second, members of the regular loyalty program option prefer a good relationship with the supplier, while for members of the advanced loyalty program option, integrated energy services play a bigger role. Third, loyalty programs could be effectively used to target the advanced segment of consumers with an offer of integrated energy services, including energy efficiency and green energy, thereby contributing to the mandatory energy savings imposed on energy suppliers and the national environmental sustainability targets.

1. Introduction

Energy markets across Europe have been confronted with multiple challenges that arose after the start of the market liberalisation in July 2007, which allowed all electricity and gas consumers to freely choose their suppliers. One of the most important challenges is increased market competition, which threatens monopolistic incumbents, the traditional energy utilities. The EU requires legal unbundling of monopolistic transmission and distribution activities from competitive activities (generation and supply). Similar patterns of market liberalisation with the separation of distribution activities have been seen in Norway, Australia, the US, and New Zealand – the latter with ownership unbundling [1]. In Latin America, Chile and Argentina have pursued the same way of liberalisation. In Asia, only Korea in 2001 and Japan in 2016 liberalised their retail electricity markets [2], while most other markets remain regulated with monopoly incumbents supplying end customers.

As competition in many deregulated markets has increased with the entry of new suppliers, the major objectives for service suppliers has become the minimisation of price perceptions, enhancing the loyalty of existing consumers, differentiating their service portfolio, and attracting new consumers [3]. Because most incumbents experience a loss of consumers, recognising the importance of retention strategies and the need for their improvements is a prerequisite to stay competitive in the market. In general, strategies directed toward creating sustainable and mutually beneficial relationships with consumers have been found to be effective in enhancing consumer loyalty [4]. As a result, consumers are now surrounded with a plethora of consumer relationship management (CRM) programs also in energy markets. Their effectiveness can be measured in multiple ways [5]; however, it is typically measured by consumer retention, increased spending, and gaining consumer insights [6]. Because retention of existing consumers is more beneficial than the acquisition of new ones [7,8], this is a clear signal for energy suppliers to improve their CRM through the improvement of their marketing activities addressing consumers' needs.

On the whole, in promoting green energy success depends on effective CRM designed to enhance consumers' benefit perception [9]. A comprehensive offer of all types of residential energy fuels and all other

energy services aimed at energy savings, energy cost reductions, and environmentally-friendly use – which could be named integrated energy services – may have the potential to enhance consumers' loyalty by increasing their emotional, as well as monetary benefits. An offer of integrated energy services promises to become an important element of CRM strategies, simultaneously promoting environmental sustainability to meet climate change policy objectives. The effectiveness of CRM, reflected in the creation of sustainable and mutually beneficial relationship with consumers, i.e. in their retention [4] however, remains to be assessed in the energy supply markets.

The effectiveness of CRM programs in retail energy markets strongly depends on the level of market competition [4], which is according to ACER's report [10] affected by consumer behaviour, retail price regulation, the regulatory framework, and the lack of a proper distinction between market activities and monopolistic ones. Key requirements for effective competition are considered to be a sufficient number of suppliers, rivalry between suppliers, rewards – in the form of monetary gains and/or better services – for consumers active in the market, and simple, low-cost, and timely switching processes [11]. In order to ensure the success of CRM programs in the energy market, several competition-related issues have to be addressed. First, the former monopolistic structure of the energy markets prevents consumers from trying new alternatives in both products and services, since it has established a forced consumer loyalty [12]. In many liberalised energy markets, traditional suppliers maintain their market shares, especially due to the lack of consumers' interest in necessity goods which are often supplied by a default supplier scheme. Second, the suppliers' influence on the market activity has been diminishing through the reduction of the contestable part of the final electricity price in recent years [13]. In contrast, various charges to support renewable energy sources (RES) and other energy efficiency schemes have increased, which further reduces the share of the contestable part of the electricity bill for final consumers [14,15]. Therefore, despite electricity being a low involvement and an essential commodity, its related cost represents a relatively small proportion in the final electricity bill for households [16]. In fact, insufficient monetary gain has been reported as the principal reason deterring consumers from switching [14]. Third, the level of consumer responsiveness, which is an important indicator of market competition, may still be low. As a possible reason, energy researchers have highlighted the institutional factor, namely the fact that all consumers could be automatically supplied by the aforementioned default supplier scheme. This provision may make consumers believe that the default supplier is an implicit recommendation from the authority [17,18]. Finally, after more than 10 years of competition, consumers may still not be aware of all possibilities of purchasing energy products that are available after the market opening.

The research setting in this paper is the Slovenian residential electricity market, which has undergone a remarkable transformation since the start of the full market opening in July 2007 [19]. When the market legally opened to competition there were five traditional residential suppliers of electricity – state-owned electricity distribution companies – on the market. Competition was very weak at the beginning because the utilities had to change their mindset to actively compete in the market, and to learn marketing strategies. New market entrants moved the market, which is seen in the remarkable increase in their market share from less than 1% in 2009 to 27% in 2015 [19]. The number of suppliers to residential consumers increased from 5 to 18. The new electricity suppliers offered lower prices and introduced marketing strategies focused on enhancing consumers' loyalty, while traditional suppliers continued to rely on old methods of operations, self-sufficiency, and inactivity resulting in the loss of consumers and the consequent drop of market shares. The transformed Slovenian electricity market complies with the requirements necessary to establish CRM programs: an increasing demand, and a liberalised market with competition between several electricity suppliers among which consumers can freely choose their supplier. According to Lewis [20], energy

suppliers that operate in such conditions have to place an emphasis on creating an efficient CRM in order to achieve a competitive advantage in the energy market. In our analysis, we focus on the loyalty program of the new entrant in the electricity market, the largest energy distribution and sales firm in Slovenia, which operates in 10 other countries of South-East Europe. This supplier has successfully built the offer of integrated energy services as an essential part of its CRM strategy where the loyalty program (LP) plays a key role.

The objective of our study is to explore the relationship between consumer preferences and consumer choice in loyalty program options. Consumers differentiate in terms of preferences for energy services and in terms of their socio-economic and behavioural characteristics. In particular, we would like to examine if the more advanced consumers preferring integrated energy services are more likely to be in the most advanced loyalty program option. In order to reach the objective, a multinomial regression model is applied to determine which consumer preferences for energy services and consumer characteristics are decisive for participation in loyalty program options. In this way, our findings may help energy suppliers with already established LPs to improve their effectiveness, while those without a LP may learn what should be considered in their successful implementation and use. Previous studies on loyalty programs primarily examined effects of LPs on consumer behaviour, and effects on consumer attitudes, while analyses of consumer's enrolment in LPs are scarcer [21]. These analyses were conducted for various service sectors but at least to our knowledge no study has examined the energy sector. Thus, this study importantly contributes to the existing knowledge by examination of consumer membership in LPs in the residential retail energy markets.

The paper is organised in five sections as follows. Section 2 reviews the literature on consumer loyalty programs and consumer preferences, and drawing on the literature proposes a theoretical model of residential energy consumers' participation in loyalty programs. Section 3 presents research methods and data used in the empirical analysis. Section 4 provides the empirical results of the principle component analysis and multinomial logistic regression. The last section contains a discussion of the results, including managerial implications for energy suppliers and policy makers, and provides a brief conclusion.

2. Theoretical background

2.1. Consumer relationship management and loyalty programs

Consumer relationship management plays an essential role in retaining existing consumers, since effective collaboration with consumers enables service providers to understand the antecedents of consumer loyalty [22]. Retention or loyalty behaviour is particularly important since it combines consumer repurchase behaviour with favourable attitudes toward the firm. Loyal consumers are also less price sensitive, and have a higher resistance to changes in the firm's services [23,24]. The empirical research confirms the positive effects of CRMs [25,26]. Bansal et al. [27] have shown a significant impact on consumer retention of the so-called "push effects" provided by CRMs, which consist of quality, satisfaction, value, trust, commitment, and price perception. According to the marketing literature, these concepts are significantly interrelated, since consumer satisfaction is determined by the difference between preferences and perception of the service received, which affects customer loyalty to the service provider in the long term [28,29]. Knowing what consumers prefer and tailoring services accordingly, may help to improve their satisfaction in order to ensure a long-term and effective relationship.

As a part of CRM, service providers often establish a loyalty program (LP), which is according to the American Marketing Association defined as "a continuity incentive program offered by a retailer to reward customers and encourage repeat business [30]." In practice, a loyalty program refers to any activity of the firm to foster and reward its consumers' behavioural and attitudinal loyalty aimed at consumer

retention and consumer share development [21]. Often a LP's members earn loyalty points for purchases from their LP provider, which can afterwards be exchanged for monetary benefits such as discounts and gifts [21]. Despite widespread use of LPs in many industries in recent years, they are primarily present in service sectors such as airlines, apparel and retail grocery stores, financial services, hotels, and casinos [31]. They are especially popular in consumer-oriented companies, which strive to identify consumer preferences to increase their marketing effectiveness [32], to identify different profitability potentials for various consumer segments [33], and to respond to an increased market competition [5].

Literature on loyalty programs has focused on the examination of consumer's enrolment in LPs, on the effects of LPs on consumer behaviour, and on the effects of LPs on consumer attitudes. It has been found that consumers' decision to enrol in a LP reflects his evaluation of the potential benefits relative to the perceived cost and risks [34,33]. For example, before the enrolment in a LP, consumers consider multiple possible benefits which can be divided into: utilitarian (e.g. economic savings, gifts), hedonic (e.g. personalised treatment, entertainment), and symbolic (e.g. social status, recognition by firm) [32,35,36]. On the other hand, they also consider perceived costs, which can be divided into monetary (e.g. cost of transportation and convenience costs) and non-monetary (e.g. privacy concerns) [37,33]. Characteristics of consumers also affect their enrolment in LPs. Typically, users that most likely enrol in a LP are heavy users of company's services, exhibit relatively high loyalty levels to the company, have quick access to the company's services, and/or are members of multiple LPs [38,34,33,39]. This decision is also positively influenced by the frequency of service use [40] and socio-economic characteristics (income) [38], while socio-demographic characteristics show little or no impact [34].

The interest of recent research has been focused on the impact of LPs on consumer attitude and behaviour [26,21]. Loyalty programs may positively affect consumer loyalty [41] in both the behavioural and attitudinal dimensions. In the behavioural dimension, they may increase consumer expenditures for the company's products through the increased frequency of service usage and/or higher purchasing volumes [33,5]. In the attitudinal dimension, this is so since they decrease price sensitivity, and increase resistance to the changes in the company's services [36,42,24]. For example, LP participation positively affects consumer retention by creating economic or psychological switching barriers [43].

The effects of LPs on consumer behaviour have been evaluated from a supplier's perspective, and imply an overall increase in a consumer's market activity (i.e. increase the duration of relationships between a consumer and the company – consumer retention), as well as higher usage levels of products and services (consumer expenditures) [21]. However, the effects of LPs on consumer behaviour differ across consumer segments as well as service sectors [21]. Across service sectors, the literature observed the positive effect of a LP on consumers' retention in both industries with high exit barriers such as contractual financial services [15], as well as in no-contractual services such as grocery retailing [16]. Additionally, LP participation positively affects consumer expenditures. For example, they increased in the retail sector [33,44], department stores [45], financial services [26], and airlines [46,5]. With respect to the consumer segments, the most significant positive effect of LPs was observed among light and moderate buyers [45,44], whilst this effect is weaker among heavy buyers probably because they have low potential for further increases of their purchase volume and frequency [25]. Most of aforementioned studies used longitudinal data for the analysis of the effects in order to observe consumer behaviour before and after enrolling in the program (e.g. [18,13,19]), but there are also some exceptions (e.g. [10]). These results emphasise the importance of tailoring an offer according to diverse consumer segments, where adequate personalised marketing strategies should be customised for each LP segment [47].

LPs also affect consumer attitude, specifically attitudinal loyalty.

For example, LPs increase consumer satisfaction with the products and services offering, as well as their satisfaction with the company. According to several studies in the service sector, consumer loyalty can be enhanced directly through satisfaction with the service [7], or indirectly through the perception of service [48]. Loyalty programs grant incentives on the basis of consumer activity, so the obtained benefits for consumers depend on their investments in the relationship with the company [5]. The rewarding mechanism has a key role for the company in maintaining relationship with consumer, since it helps to create a perceived value and satisfaction, which improves economic decision-making and motivation [49]. One example of rewarding mechanism is rewarding through a loyalty card, which is usually used not only to reward consumers' loyalty, but also to collect information on their consumption habits. While in some sectors there is no direct impact of rewarding through a loyalty card on a consumer's loyalty, as mainly the emotional rather than calculative (monetary) consumer's commitment drives loyalty to the service provider, studies for the service sector, such as for telecommunication and banking reveal that loyalty programs enhance consumer loyalty by providing monetary benefits which increase switching costs [26,12,25]. The latter loyalty type is regarded as a "forced" loyalty, which in comparison to the earned loyalty lasts as long as the consumer perceives switching barriers. The energy sector is similar to telecommunication sector, as both have low switching rates with strong switching inertia created by former monopolies [16]. Given that no such studies for the energy sector exist, it may only be speculated that in the energy sector, similarly as in telecommunications, the calculative commitment has greater impact on loyalty than the emotional commitment. However, in our study we do not focus on the impacts of LPs on behavioural and attitudinal loyalty. Drawing on findings of heterogeneous consumer segments, our research aims at identifying if LPs and their various options attract consumer segments with different preferences for energy services.

2.2. Modelling consumer preferences and participation in LPs

Drawing on the literature outlined above, we propose a theoretical framework that investigates the impact of consumers' preferences for energy services on their participation in the loyalty program of the energy supplier. According to the literature and the current products and services offered in the retail energy markets, consumer preferences may be expressed through evaluating six attributes of energy services, namely: core service quality, service process quality, competitive and transparent pricing, brand reputation, offer of additional services, and offer of green energy. In order to provide the argumentation for including these attributes in our model, depicted in Fig. 1, we briefly discuss their relevance.

First, in the case of energy services the *core service quality* refers to the reliability of energy supply or technical service quality [50]. Empirical studies have shown that improvements in service quality may significantly increase the preferable view of the supplier [51], which may explain why energy suppliers are trying to improve the perception of the quality of their services [7]. Therefore, it is assumed that preferences for the core service quality are one of the most essential offer elements and represent a key attribute of energy services. The quality and reliability of supply has been reported as the third most important reason for the supplier switching in the EU (2015).[1]

---

[1] It should be noted that interruptions at the residential level depend on failures of the distribution network, which is typically operated by a different company. However, in general, consumer knowledge on the electricity supply chain can be considered very limited. According to the ACER report consumers in many countries are not aware of the unbundling of activities, and are still afraid that their supply may be interrupted if they switch to another supplier. Consumers receive only one bill for electricity, covering both network and commodity charges, which additionally mixes the difference between the energy supplier and distribution network operators. Therefore, following
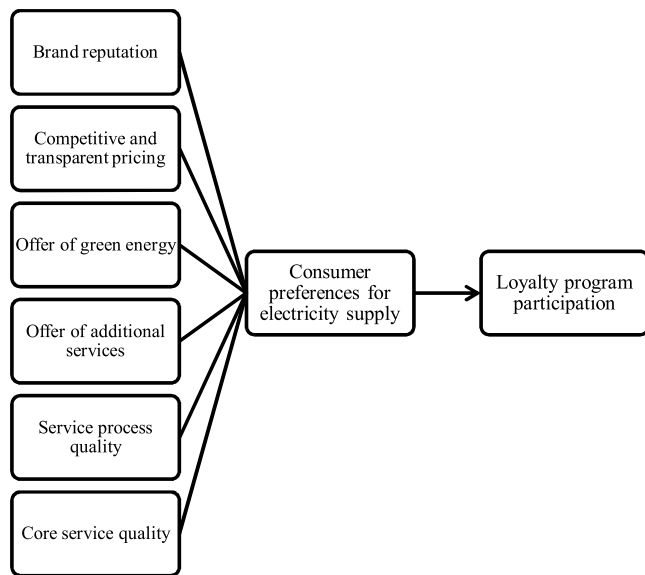
Fig. 1. Hypothesised model of the impact of consumer preferences for electricity supply on participation in loyalty programs.

Second, *service process quality* is a key to exceeding consumer expectations [52]. According to Parasuraman et al. [52], consumer preferences for service process quality are determined by four dimensions: tangibles, responsiveness, assurance, and empathy. In the case of energy supply, service process quality refers to the supplier's responsiveness, courtesy, accessibility, competence, and communication techniques. If consumers prefer these attributes, they are probably interested in building a long-term relationship with the supplier [52], which significantly influences their preferences for an energy offer.

Third, the *price* importantly influences consumer preferences, since consumers perceive the price as a determinant of service performance ("if a consumer pays more, he expects more") [52]. Price perception for the consumer takes into consideration not only the monetary pay, but also additional costs (time costs, search costs, logistic costs, etc.) which are perceived as a sacrifice for a consumer when searching for the service [53]. Further, Lichtenstein et al. [54] found that price perceptions are positively correlated with price-seeking and importantly impact on consumer satisfaction.

Fourth, *brand reputation* creates a positive attitude toward a supplier and is viewed as a key element of a successful relationship between the two [22]. In order to increase consumer trust in the brand, suppliers aim to strengthen their image with marketing activities. It is also expected that trust in the energy supplier would increase satisfaction since it reduces the worry whether the supplier would fulfil his promises and satisfy consumer needs [55]. Firms that are perceived with a better image and trustworthiness also observe a higher level of satisfaction with their products and services, and are more successful in retaining consumers [4].

Fifth, expanding the *offer with additional services* is considered to be one of the most successful competitive strategies, as it improves consumer satisfaction by increasing consumer benefits from the offer [55]. Specifically, it refers to the expanding the offer with additional products and services, such as a combined (double or multi-fuel) home energy supply, energy efficiency consultation and technology installation, purchase or lease of home appliances, online billing system, etc. This strategy may cause that price comparisons for a consumer are less transparent, and switching to another supplier less likely [56,7]. Buying

additional services from the same supplier may also reduce transaction costs and provide savings for a consumer from purchasing bundled offers, which could increase consumer overall satisfaction and loyalty.

Sixth, the offer of *green energy* may attract environmentally-aware consumers. Green energy, generated from renewable sources, as well as the offer of energy efficient technologies is particularly important for them. Those consumers are even prepared to pay a higher premium for using such energy [17]. Therefore, the share of green energy in the default supplier's offer may importantly affect consumer preferences for "green," and consequently increase consumer satisfaction.

These six constructs shape the preferences of consumers in the energy market and drive their choices for the participation in the loyalty programs. The theoretical framework for participation in the loyalty program illustrated in Fig. 1 may, in the case of empirical validation, provide insights for an energy supplier to create marketing activities that may increase the effectiveness of the overall consumer relationship management. In the next section, detailed information on the constructs of the proposed theoretical framework is provided, together with control variables included in the model and methods used in the analysis.

3. Methods and data

3.1. Methods and model description

The empirical analysis starts with the principal component analysis (PCA), which is meant to extract the main factors from a consumer's preference constructs (outcomes of the online survey described in Section 2.2). The purpose of PCA is to reduce the number of consumer preferences for energy services to the smaller number of extracted factors (preferences), which will be used to predict the consumer's position in a loyalty program in a subsequent multinomial regression model.[2] Bartlett's PCA [57] with a Varimax rotation extracts an orthogonal factor solution. This is a preferable outcome to a classical factor solution with an arbitrary distance measure since it can help to reduce multicollinearity in subsequent regression modelling [58]. The appropriateness of PCA is tested by Bartlett's Test of Sphericity and the Kaiser-Meyer-Olkin (KMO) Test for Sampling Adequacy. In addition, Confirmatory Factor Analysis (CFA) is carried out to test if the extracted PCs have a reliable structure.

The multinomial logit model is a common method for analysing factors affecting consumer choices among the alternatives. In this setting, it specifies the probability that a consumer chooses a particular option in the loyalty program as a function of consumer preferences for energy services, consumer socio-economic characteristics, satisfaction with the supplier, energy consumption, and the use of energy services. Thus, the dependent variable is a categorical type describing the choice made by an individual. It assumes that regression factors vary between individuals and not between the alternatives, which is especially suitable when examining individual-specific determinants of the choice made. The model assumes the Independence of Irrelevant Alternative (IIA), which specifically means that adding another category of dependent variable would not affect the probability of choosing the existing ones. Similarly, as for the dependent variable, there is no prescribed structure for the independent or explanatory variables because logistic regression makes no assumption about their distribution. The regression can model both, continuous as well as categorical independent variables. Since the relationship between explanatory

_____

(*footnote continued*)
established consumer perceptions of service quality by the ACER survey, we decided to treat the uninterrupted supply as a core service quality.

_____

[2] In order to derive the causal effects between consumer preferences and their decision to choose the LP's options, this study would need longitudinal data observing consumers' behaviour before and after entering the loyalty program, such as in the study for financial services (insurance contracts). Because in our case we have only cross-sectional data, we cannot identify causal effects, but only the likelihood that consumers with certain preferences would be in a particular LP group.

variables and the dependent variable is not linear, there has to be a link function that maps values into a certain interval. In the case of multinomial logistic regression, the logit link function is used for this transformation.

The theoretical framework of consumer choices among categories in the loyalty program is based on a utility maximisation theory. With an assumption that an individual will choose a particular category in the loyalty program according to the highest utility (i.e. consumer is a utility maximiser [59]), logistic regression modelling can successfully identify differences in consumer preference levels among multiple consumer segments. The utility that an arbitrary individual i obtains from selecting the category j in the loyalty program, U_{ij}, is the utility function of deterministic component (V_{ij}) and a stochastic component (ε_{ij}) expressed in the equation:

$$U_{ij} = V_{ij} + \varepsilon_{ij}, \ i = 1, \ 2, \ ...N, \ j = 1, \ 2, \ ...,J \tag{1}$$

The deterministic component V_{ij} is determined by the product of $\beta_j X_i$, where vector X_i denotes the set of outcomes on preference items, and β_j denotes the vector of regression coefficients to be estimated [60]. The stochastic term ε_{ij} is an error term that captures other factors that might affect consumer choice. Thus, the utility function can be written in the form $U_{ij} = \beta_j X_i + \varepsilon_{ij}$. Given that the utility is ordinal, only differences between utilities of alternatives are relevant to model the choice for a particular one:

$$P_i(j) = Prob\{U_{ij} - U_{ik} \geq (\beta_j - \beta_k)X_i + (\varepsilon_{ij} - \varepsilon_{ik})\}; \ j \neq k, \ \forall \ k \in J \tag{2}$$

With an assumption that error terms follow a Gumbel distribution, the probability that an individual i chooses the category j in the loyalty program from the set of alternatives J can be estimated using the logit link function in a multinomial logit model [61]:

$$P_i(j) = \frac{exp(\beta_j X_i)}{\sum_{k \in J} exp(\beta_k X_i)} \tag{3}$$

where two characteristics of probabilities need to be satisfied $0 \leq P_i(j) \leq 1$ and $\sum_{j=1}^{J} P_i(j) = 1$. In order to estimate the parameters of nonlinear equations of the multinomial logit model, the maximum likelihood estimator is utilised [62,59]. Multinomial models are estimated using the normalisation of the parameters of one group, which represent the reference group. Typically, we impose the normalisation on the first group parameters. Furthermore, a logistic framework is especially suitable in models since it has no requirements for normality, linearity, or homogeneity of variance for the dependent variable, which are rarely satisfied when examining the heterogeneity of expectations [62,59].

With the assumption on the distribution of error terms, we can test the significance of regression coefficients and measure the quality of the estimates. First, the test of significance of the regression model as a whole tests the hypothesis of all estimated coefficients being together equal to zero. The overall model's goodness of fit is measured by the Likelihood Ratio test, where the test statistic is distributed approximately as χ^2 with the degrees of freedom equal to the number of significance-tested parameters. In order to assess the predictive power of the overall model, the McFadden pseudo R^2 value is reported [61], which usually tends to be low in the discrete choice models. The interpretation of the results has to be performed relatively to the reference category, since the coefficients of the multinomial logistic regression are estimated relatively to the reference category.

Marginal effects measure the approximate amount of change in probability of choosing alternative j as a result of a unit change in a given explanatory variable, while all other variables equal their means. The calculation of the marginal effects is the following:

$$\frac{\partial P_{ij}}{\partial X_i} = \frac{exp(\beta_j X_i)}{\sum_{j=1}^{J} exp(\beta_j X_i)}\beta_j - \frac{exp(\beta_j X_i)}{\left[\sum_{j=1}^{J} exp(\beta_j X_i)\right]^2}\sum_{j=1}^{J} exp(\beta_j X_i)\beta_l$$

$$= P_{ij}\beta_j - P_{ij}\sum_{l=1}^{J} P_{il}\beta_l = P_{ij}(\beta_j - \bar{\beta}_i) \tag{4}$$

where $\bar{\beta}_i = \sum_{l=1}^{J} P_{il}\beta_l$ is the probability weighted average vector of coefficients. The marginal effect estimates the impact of a variation of a chosen explanatory variable in X_i on the individual's choice probability for the group j. It depends on the values of regressors X_i and all estimated coefficients β_l. Marginal effects are calculated at the means of all other explanatory variables, and do not need to have the same sign as corresponding coefficients [62].

3.2. The sample and data description

In order to test the proposed structure of the model we use data set of 984 consumers of the selected Slovenian energy supplier. The data set of these consumers was combined from three data sources. The first source is the supplier's database containing socio-economic characteristics, energy consumption, usage of energy services, and billing information of his electricity contract holders. The second source contains data about participation of these consumers in the supplier's loyalty program, about the type of participation, and about their loyalty program activities (i.e. the number of accumulated loyalty points based on purchases, the number of used loyalty points for discounts, etc.). The third data source was an online survey on consumers' preferences for energy services, their attitudinal and behavioural aspects of the energy use and about the satisfaction with this supplier.[3] We designed the survey in cooperation with the market research agency, which conducted the survey.

An online survey was conducted in February 2016. A self-administered questionnaire was designed and sent to 5466 electricity contract holders, selected by the random sampling. A total of 984 consumers answered the survey, which corresponds to the 18% response rate. All three data sources were merged at the individual level.

The supplier was chosen because of several characteristics that enable us to conduct this type of study. Since the liberalisation of the electricity market, the supplier has been expanding its business in several energy retail markets and also started offering various energy services. This energy supplier is now present in 10 neighbouring energy markets. His offer of integrated energy services includes the retail sale of several energy fuels (electricity, LPG, natural gas, heating oil, and petroleum products), and additional energy-related products and services (online billing system, automatic meter reading, online shopping, sales of energy efficient appliances and technologies, retail shops, and energy efficiency consultations and installations). The supplier has also developed a well-known loyalty program that rewards consumer loyalty by offering discounts, products, and services of renowned brands at favourable prices, online buying in its online shop, and items that can be claimed at its points of sale free-of-charge in exchange for the collected loyalty program points. The loyalty program also offers consumer loyalty cards that enable them to receive special discounts that are tailored offers to their needs, information on future marketing actions, and payment processing. Also, it offers consumers to bundle their consumption with several supplier's energy services. In contrast, it allows the supplier a useful platform to collect information on consumers' purchasing habits. Besides the regular loyalty card, consumers can also choose a payment loyalty card which offers extensive monetary gains while enabling them to carry out payment transactions, allowing payment delays, and offering additional benefits, amounting yearly up to

---

[3] Behavioural aspects of energy services refer to the directly measured consumption data, while attitudinal aspects of energy services refer to the directly measured consumer preferences.

Table 1
Socio-economic characteristics of the sample.

Characteristics	Regular card (LC)	Payment loyalty card (PLC)	No card (NC)	Slovenian population
Number of consumers	604	241	139	–
Share of consumers (%)	61.4	24.5	14.1	
Gender				
Male (%)	62.3	65.6	64.9	49.1
Female (%)	37.7	34.4	35.1	50.9
Age				
Less than 25 years (%)	0.2	0.0	0.0	6.4
26-35 Years (%)	13.4	4.6	6.1	16.7
36-45 Years (%)	26.6	21.7	21.2	18.4
46-55 Years (%)	28.2	32.1	30.3	18.3
56-65 Years (%)	19.4	28.7	27.3	17.7
Over 65 Years (%)	12.2	12.9	15.2	22.5
Number of HH[a] members				
1 member (%)	8.0	7.6	6.6	32.6
2 members (%)	25.4	24.5	27.2	25.1
3 members (%)	24.9	19.0	21.3	18.6
4 members (%)	23.9	29.5	26.5	15.2
5 members (%)	10.3	8.9	7.4	8.5
6+ members (%)	7.5	10.5	11.0	/
Education				
Primary education (%)	2.6	0.4	2.4	11.9
Vocational education (%)	13.1	12.9	14.0	13.6
High school education (%)	28.4	35.3	33.3	12.4
Professional education (%)	25.3	24.6	28.7	12.4
University and higher education (%)	30.5	26.8	21.7	/
Average Monthly HH[a] income(€)	1841.8	1887.3	1801.8	1800.1
Dwelling type				
Single house (%)	51.2	67.6	50.7	50.4
Double dwelling (%)	9.5	4.6	4.3	3.7
Multi-dwelling/ Row house (%)	12.1	10.8	15.2	12.7
Townhouse (%)	25.6	16.6	27.5	30.6
Other/No answer (%)	1.7	0.4	2.2	2.6
Dwelling rented				
Yes (%)	5.5	1.7	8.0	16.4
No (%)	89.0	95.4	85.5	80.9
Other/No answer (%)	5.5	2.9	6.5	2.7
Location				
Urban (%)	58.8	53.1	60.8	53.5
Rural (%)	41.2	46.9	39.2	46.5

[a] HH - household.

€40 for the most "active" consumers (in terms of frequency and total amount of purchases).

Socio-economic characteristics of consumers based on the choice of the loyalty program participation are presented in Table 1. Three groups of consumers of the loyalty card program have been identified: 25% holding the payment loyalty card, 61% holding the regular loyalty card, and 14% consumers without the loyalty card. This very closely corresponds to the initial database, which does not indicate the presence of potential problems with self-selection bias in our sample. Sample characteristics are also compared to the Slovenian population [63].[4] Differences in some dimensions between the sample and the population are acceptable for our survey, since for example a high proportion of males and high average age correspond to the

characteristics of an average electricity contract holder in Slovenia. These two variables were used only at the descriptive level of analysis and not in the subsequent regression analysis. The share of households with only one member in the sample is significantly lower than the share in the population. The education levels are comparable between the sample and population, except there is a significantly larger population share of residents with primary education. Moreover, average monthly income in the population is €1800.1, which is slightly lower than in our sample. The distribution of dwelling types is similar between the sample and population. 80.9% of all dwellings in the population are owned, while this share in our sample is more than 90%. A total of 53.5% of people in the population live in urban areas [63] compared to 57.7% in the sample.

Table 2 further provides descriptive statistics of consumer satisfaction and energy-related consumption habits for each consumer group in the loyalty program. Similarly to other studies [16] consumer satisfaction rates are extremely high. More than 90% of consumers are either very satisfied or satisfied with the current supplier. According to the survey, this could be explained by the fact that the energy supplier offers one of the lowest prices in the market, and his offer consists of a wide range of quality products and services which foster consumer satisfaction. Another reason may be that because there are many competing suppliers in the market and the switching process is easy, consumers stay with the supplier only if they are highly satisfied with the supplier. The average monthly household electricity bill amounts to € 58.11, which very well corresponds to the population value of € 57.8 [51]. From Table 2 we can observe that on the annual level, electricity expenditure accounts for almost 50% of total energy budget. More than 75% of consumers in the sample are also buyers of other supplier's products and services, in particular of one or more additional energy fuels. The typical electricity consumer is also making purchases at the supplier's petrol stations and participates in his many offers.

Data in Table 2 clearly shows that consumers with the payment loyalty card (PLC consumers) are the most active group in collecting loyalty points. They are also the largest consumers of electricity and the heaviest users of energy fuels, both in terms of their diversity (number of additional energy fuels) and frequency (usage of additional energy services per month). Statistics also suggest that PLC consumers are the most advanced users, as they are more frequently using energy products (number of bills for the energy products), as well as they are using the on-line billing system (number of e-bills for energy products), which enables them to monitor and analyse their consumption instantly.

All constructs of the consumer preferences for energy services[5] are measured on a five-point Likert scale anchored by "strongly disagree" to "strongly agree" [24,64]. The survey response categories for six dimensions of consumer preferences established in Section 2.2 are presented in Appendix A. In order to reduce the number of explanatory variables entering the multinomial logit model, PCA is employed to extract principal components from consumer preferences. Therefore, a more detailed discussion on preferences for the supplier offer follows in Section 4.1.

4. Results

In the same manner as methods, the results are also presented in two steps, starting with PCA results and continued with multinomial logistic regression results. All empirical analyses in our study were performed using R statistical software [65]. Specifically, multinomial logistic regression was performed using R's package mlogit [66].

---

[4] It would be more suitable to compare the data with characteristics of the average Slovenian electricity contract holder, however this data is not available.

[5] When consumers were asked about their preferences for energy services, they were asked about their view of ideal supplier i.e. about ideal offer of energy services and not about the offer provided by their current energy supplier.

Table 2

Energy-related consumption data (group averages in 2015) and satisfaction with the supplier.

	Regular card (LC)	Payment loyalty card (PLC)	No card (NC)
Satisfaction with the supplier			
Satisfaction (1- not at all satisfied, 5-very satisfied)	4.3	4.5	4.3
Very satisfied (%)	44.3	59.4	45.2
Satisfied (%)	46.4	33.9	42.3
Neither satisfied or dissatisfied (%)	8.6	5.9	9.5
Dissatisfied (%)	0.5	0.8	1.5
Very dissatisfied (%)	0.2	0	1.5
Loyalty card points			
Current (8.1.2016)	1012.7	2022.6	0
Collected	1889.5	3617.7	0
Used	1041.4	1695.5	0
Energy bill – electricity (€)	675.6	768.0	643.2
Energy bill – all fuels without electricity (€)	676.0	880.4	543.3
Number of additional energy fuels	1.2	1.5	0.6
0 (%)	5.5	2.1	48.9
1 (%)	74.0	49.8	44.7
2 (%)	20.5	46.9	5.7
3 (%)	0	1.2	0.7
Number of bills for the energy products	12.2	14.7	10.1
Number of e-bills for energy products	0.3	0.5	0.2
Usage of additional energy services	3.3	3.5	3.2

Note: All consumption data refer to annual averages except the usage of additional energy services which refers to the purchases of additional energy services per month.

4.1. Results of the principal component analysis

First, an exploratory factor analysis (PCA with subsequent Varimax rotation) was performed for a wide range of consumer preference items reported in the survey, which led to the three factor solution with an explained variance of 54.9%. Next, we tested the appropriateness of the PCA results. Bartlett's test of Sphericity with p-value equal to 0.000 and Kaiser-Meyer-Olkin's test statistic equal to 0.919 indicate extremely adequate structure of factors. All items have satisfactory loadings, and Cronbach's alphas are also satisfactory (Table 3), indicating that the scale is very reliable. The three factors ascertained with regard to consumer preferences for energy services, listed in Table 3, can be interpreted as follows. PC1 represents *consumer relationship management*. Consumers who score highly on this factor prefer good collaboration between the consumer and the supplier (i.e. active marketing communication, free-of-charge help to consumers, user-friendly company, rewarding loyalty, etc.). Consumers emphasise the importance of quality of information provided by the supplier as well as the supplier's public image. This factor combines six items with reliability of construction of 83.5% (and with eigenvalue equal to 3.052). PC2 combines additional energy services with those directed toward increasing energy efficiency and with green energy under the name *integrated energy services*. Consumers who score highly on this factor prefer an extension of the offer of electricity with additional services with the emphasis on energy efficiency, as well as on the offer of green electricity. PC2 factor combines seven items with reliability of construction of 80.2% (and with eigenvalue equal 3.137). PC3 denotes *reliable and low price services*. Consumers who score highly on this factor prefer a reliable and uninterrupted core service. These consumers also expect the lowest electricity price and a clear and transparent bill. PC3 factor combines three items with reliability of construction of 68.2% (and with eigenvalue equal to 2.585).

Table 3

Principal component analysis results.

Description	PC1	PC2	PC3	Communalities
Core service quality				
Offering reliable, uninterrupted services			0.673	0.541
Service process quality				
Organising a network of firms providing repair of HH* appliances	0.583			0.643
Company is a consumer-friendly company	0.711			0.644
Rewarding consumer loyalty	0.635			0.520
Free-of-charge help to consumers	0.723			0.633
Offering advice on how to reduce electricity consumption	0.728			0.630
Competitive and transparent pricing				
Offering the lowest price			0.690	0.559
Company's bill is clear and transparent			0.590	0.499
Brand reputation				
Company has a great reputation	0.548			0.497
Offer of additional services				
Offering multiple tariff billing systems		0.488		0.379
Offering tailored offer to HH specifications		0.567		0.513
Offering an online electricity bill payment		0.507		0.489
Opening an online consumption monitoring system		0.583		0.547
Opening a specialised shop offering electric appliances		0.737		0.618
Offering energy performance certificate		0.740		0.575
Offer of green energy				
Offering green energy		0.664		0.487
Explained variance (%)	19.1	19.6	16.2	
Cronbach alpha	0.835	0.802	0.682	

Note: * HH - household.

The robustness of the factor solution was also tested by dividing the sample in two equally sized subsamples and conducting PCA on each. No significant divergence in the PCA results between the two subsamples and the whole sample was found. To confirm the structure of the presented 3-factor preference solution, we applied a Confirmatory Factor Analysis (CFA). Table 4 presents the CFA results. According to Brown [67], results of CFA indicate that the uni-dimensionality of all factors is acceptable.

4.2. Results of multinomial logistic model

In the second step, the multinomial logit model is employed to investigate consumers' participation in the loyalty program. The dependent variable consists of three distinct categories based on the participation in loyalty card program, as described in Section 3. As a reference group, the group with a regular loyalty card (LC group) was taken, since it presents an average consumer of the energy company. The explanatory variables included in the model are consumer preferences for energy services extracted by the PCA (PC1 to PC3), and are presented in Table 3. For the multi-item factors, the orthogonal factor scores were

Table 4

Confirmatory factor analysis.

Factor	GFI	AGFI	TLI	CFI	RMSEA
PC1: Consumer relationship management	0.974	0.938	0.939	0.963	0.092
PC2: Integrated energy services	0.957	0.914	0.884	0.922	0.098
PC3: Reliable and low price services	1.000	1.000	1.000	1.000	0.000

Note: GFI = Pearson's Goodness of Fit, AGFI = Adjusted Goodness of Fit, TLI = Tucker-Lewis Index, CFI = Comparative Fit Index, RMSEA = Root Mean Square Error of Approximation.

Table 5
Results of the multinomial logit model.

Explanatory variables	Payment loyalty card (PLC) vs. Regular card (LC)		No card (NC) vs. Regular card (LC)	
Coefficients & Standard Error				
Intercept	− 5.220[c]	1.045	− 0.929	1.453
PC1: Consumer relationship management	− 0.210[a]	0.115	0.157	0.171
PC2: Integrated energy services	0.402[c]	0.107	0.186	0.155
PC3: Reliable and low price services	0.103	0.107	0.083	0.148
Satisfaction with energy supplier	0.484[c]	0.170	− 0.189	0.228
Usage of additional energy services	0.319[c]	0.095	− 0.275[b]	0.130
Number of additional energy fuels	1.461[c]	0.199	− 0.578	0.403
Average monthly consumption	0.356[c]	0.102	− 0.260	0.173
Number of HH members	− 0.024	0.081	0.101	0.127
Household income (per capita)	− 0.024	0.117	0.028	0.172
Education	0.130	0.089	− 0.045	0.133

The overall model has $\chi^2 = 137.93$, p = 0.00.
Pseudo R-square: McFadden = 0.120.
 [a] Significant at the 0.10 level.
 [b] Significant at the 0.05 level.
 [c] Significant at the 0.01 level.

utilised in the analysis. To control for other potential factors that may impact on the participation in loyalty program besides consumer preferences, we added additional explanatory variables such as satisfaction with the energy supplier, the actual usage of additional services, an average monthly electricity consumption (i.e. the electricity bill), and other socio-economic characteristics of the contract holders (education, monthly income, the number of household members). Satisfaction was measured on a five-point Likert scale, where five represents the most satisfied level. Usage of additional energy services corresponds to the frequency of the usage of energy services per month and enters the model in this form. Education is measured on a six-point scale, where *one* represents the lowest education (primary school) and *six* the highest education level. Other socio-demographic variables reported in Table 1 were considered in the initial model. However, similarly to other studies [34] their impacts did not turn out significant and were thus excluded from further analysis.

Table 5 depicts the results of the multinomial logistic regression. The McFadden Pseudo R Square of 0.120 indicates that the goodness of fit of the model is satisfactory for large cross-sectional data. In addition, all explanatory variables have the expected signs. The results reveal significant differences in preferences among three consumer loyalty groups. In particular, consumers that value integrated energy services are more likely to be in PLC group than in a LC one. The actual usage of additional services also reveals significant differences among three consumer groups. As expected, consumers using additional services are more likely to belong to the PLC group than to the LC group. Moreover, the use of additional services makes the consumer less likely to be in no card (NC) group than in the LC group.

The fact that most coefficients of the NC group have been found to be insignificant, may be to some extent attributed to the high heterogeneity of consumers belonging to this group, which is seen in high data variability consequently resulting in large standard errors of the estimated coefficients in the multinomial regression model. We also observe a strong significant difference between the PLC and LC groups in the first principal component of preferences, namely consumer relationship management (PC1). Interestingly, the PLC group considers the consumer relationship management less important than the LC group. This may indicate that consumers in the PLC group are more focused on raising their benefits than on the closer relationship with the supplier compared to the regular loyalty cardholders (LC). Consumers with higher monthly electricity consumption are also more likely to have a PL card than regular users. Higher consumption levels of

electricity together with the heavier usage of additional services and fuels indicate their higher level of purchasing activity, which can be realised with the PL card used for various supplier's products and services. Regular consumers may perceive it is not worth bothering with the PL card if it is used for the less frequent and lower value transactions that could also be processed with other general payment cards.

Furthermore, Table 6 provides marginal effects derived from the estimated multinomial logit model. Similar to the results of the multinomial regression model presented in Table 5, the marginal effects show that the probability of being in the PLC group increases with the number of additional energy fuels and usage of additional energy services, with higher average monthly consumption and higher satisfaction with the supplier and decreases with the higher preferences for the good supplier's relationship with consumers. In contrast, the importance of integrated energy services, the number of additional energy fuels, higher satisfaction with the supplier and higher monthly consumption of electricity reduce the probability of being in the LC group. In line with these results, the probability of belonging to the NC group is negatively associated with the usage of additional energy services, additional energy fuels, and with higher monthly consumption. Based on the energy consumption indicators (Table 2) this consumer group seems to be the most passive, which may explain why it is less interested in the usage of additional energy services offered by this supplier. This somehow corresponds to Stauss et al. [40] findings of low shopping frequency being a key reason not to be part of LP.

The number of HH members does not have significant impact on the likelihood of being in a particular LP group in our study. When examining the effectiveness of the LP, Leenheer et al. [33] also found that larger households do not significantly increase their expenditures after the enrolment in the LP. Income has also failed to explain the likelihood to participate in LP options in our study, although consumers with higher HH income are in study of Allaway et al. [38] more likely to enrol in LP. However, according to van Doorn et al. [68] those with higher income have higher expenditures on LP products overall, but tend to enrol in multiple LPs which may explain why they do not have significantly higher expenditures on average in any LP than non-members.

5. Conclusions

Our study explores the relationship between consumer preferences for energy services and participation in loyalty programs. It augments

Table 6
The marginal effects of multinomial logit model.

Explanatory variables	Regular card (LC)	Payment loyalty card (PLC)	No card (NC)
Marginal effects			
PC1: Consumer relationship management	0.025	−0.040[b]	0.015
PC2: Integrated energy services	−0.074[c]	0.068[c]	0.006
PC3: Reliable and low price services	−0.021	0.017	0.004
Satisfaction with energy supplier	−0.067[b]	0.090[c]	−0.023
Usage of additional energy services	0.036[b]	0.062[c]	−0.026[c]
Number of additional energy fuels	−0.201[c]	0.271[c]	−0.070[c]
Average monthly consumption	−0.042[b]	0.068[c]	−0.026[b]
Number of HH members	−0.002	−0.006	0.008
Household income (per capita)	0.005	−0.004	0.002
Education	−0.018	0.024	−0.006

[a] Significant at the 0.10 level.
[b] Significant at the 0.05 level.
[c] Significant at the 0.01 level.

the current knowledge on loyalty programs by expanding the examination to the energy markets. The results could be used to identify potential participants in the loyalty programs with respect to their preferences for energy services. Identifying consumer types in loyalty programs reveals important information to energy suppliers on how to tailor their CRM strategies for different consumer segments.

The results of our study reveal that consumers have heterogeneous preferences for energy services, which is also reflected in their position in loyalty programs. Payment loyalty card holders prefer integrated energy services to a good relationship with the supplier. These consumers do not only express preferences for additional services, but also follow their preferences in actual purchasing behaviour. They are heavier users of additional services than regular loyalty card holders, buy more fuels on average, consume more electricity, and are also more satisfied with the supplier compared to regular users. The energy supplier should target this most advanced LP group by expanding the regular offer with a variety of different products and services including multiple fuels. Designing and marketing a comprehensive offer of integrated energy services could stimulate their purchases and in turn increase supplier's revenues.

Our findings also imply that improving relationship management is important for energy suppliers to retain and attract consumers, but not necessarily the most beneficial strategy for all consumer segments. Regular consumers seems to be satisfied with more modest monetary rewards (in terms of discounts on purchases based on the collected points) while seeking the supplier's attention and care. With shrinking end-user price differentials among suppliers in the market as a result of intensive competition, consumer preferences for low prices and related savings, present across all consumer segments in our study, may continue to play an important role, but are becoming less crucial when comparing different suppliers' offers.

In general, consumers participating in the loyalty program have higher expenditures (higher electricity bills and bills for other energy products) and a higher frequency use (a higher number of bills and

more energy fuels purchased) compared to consumer not involved in the loyalty program. In the attitudinal dimension, the lower price sensitivity has not been detected. This finding also complements other studies, where behavioural loyalty has been found to be more profound than attitudinal loyalty.

Our study may also inform energy suppliers on how to effectively address various consumer segments to achieve their mandatory goals of prescribed energy savings on end-user sites. Loyalty programs could serve as an important information source and tool to achieve these mandatory targets, imposed by the EU energy efficiency policy, more effectively. Focusing marketing strategies designed to promote EE services and technologies on the consumers, participating in the loyalty programs, in particular to the most advanced segment (payment loyalty cardholders) is preferable to targeting all consumers in the same way. These implications are also informative for policy makers who could promote loyalty programs as an effective tool contributing to the fulfilment of mandatory energy saving targets. To conclude, identified consumer heterogeneity in our study clearly conveys a message to the energy suppliers that tailoring marketing strategies and customising them to respond to different loyalty program consumer segments could better serve in consumer retention and consumer acquisition strategies than the adoption of "one size fits all" solution.

Declarations of interest

None.

Acknowledgements

Appendix A

Table A1.

Table A1
Measurements of preferences for energy services.

Description
1. Core service quality
The supplier gives priority to avoiding supply interruptions (e.g. blackouts). In case of supply interruptions, service is reinstalled in due time.
2. Service process quality
The supplier organises a network of firms providing repair of household appliances.
The company is a consumer-friendly company.
The company has a well-established rewarding loyalty system for its consumers.
The supplier offers help and support for the clients free of charge.
The supplier offers adequate consultation on how to save energy and on the safety of home installations, etc.
3. Low and transparent pricing
The supplier's services are offered at the lowest prices in the market.
Supplier provides a clear and transparent bill.
4. Brand reputation
Supplier is well known to the consumer and has a good reputation.
5. Offer of additional services
The supplier offers two or more tariff billing systems.
The supplier offers flexible contracts, customised to the client's specific needs.
The supplier offers the possibility of online interactions with its clients.
The supplier offers a smart home energy monitoring system.
The supplier offers other energy products such as electric appliances, meters, etc.
The supplier offers the energy performance review and issuing of an energy performance certificate.
6. Offering green energy
The supplier offers green energy.

References

[1] F. Sioshansi, W. Pfaffenberger, Electricity Market Reform: An International Perspective, Elsevier, Kidlington, Oxford, UK, 2006.

[2] K.J. Shin, S. Managi, Liberalization of a retail electricity market: consumer satisfaction and household switching behavior in Japan, Energy Policy 110 (2017) 675–685.

[3] A. Payne, P. Frow, Relationship marketing: key issues for the utilities sector, J. Mark. Manag. 13 (no. 5) (1997) 463–477.

[4] L.Y. Peng, Q. Wang, Impact of relationship marketing tactics (RMTs) on switchers and stayers in a competitive service industry, J. Mark. Manag. 22 (no. 1–2) (2006) 25–59.

[5] Y. Liu, R. Yang, Competing loyalty programs: impact of market saturation, market share, and category expandability, J. Mark. 73 (2009) 93–108.

[6] J. Nunes, X. Dreze, Your loyalty program is betraying you, Harward Bus. Rev. 84 (no. 4) (2006) 124–131.

[7] P. Hartmann, V. Apaolaza- Ibáñez, Managing customer loyalty in liberalized residential energy markets: the impact of energy branding, Energy Policy 35 (no. 4) (2007) 2661–2672.

[8] B. Nesbit, E-business: why waiting could cost you, Public Util. Fortnightly 1 (no. 5) (2000) 18–20.

[9] P. Hartmann, V. Apaolaza- Ibáñez, Consumer attitude and purchase intention toward green energy brands: the roles of psychological benefits and environmental concern, J. Bus. Res. 65 (no. 9) (2012) 1254–1263.

[10] ACER, ACER/CEER Annual Report on the Results of Monitoring the Internal Electricity and Natural Gas Markets in 2012, Publications Office of the European Union, Luxemburg, 2013.

[11] ACER, ACER/CEER Annual Report on the Results of Monitoring the Internal Electricity and Natural Gas Markets in 2015, Publications Office of the European Union, Luxemburg, 2016.

[12] J.E. Wieringa, P.C. Verhoef, Understanding customer switching behavior in a liberalizing service market, J. Serv. Res. 10 (no. 2) (2007) 174–186.

[13] T.M. McDaniel, P.A. Groothuis, Retail competition in electricity supply—survey results in North Carolina, Energy Policy 48 (2012) 315–321.

[14] ACER, ACER/CEER Annual Report on the Results of Monitoring the Internal Electricity and Natural Gas Markets in 2014, Publications Office of the European Union, Luxemburg, 2015.

[15] A. Paladino, A. Pandit, Competing on service and branding in the renewable electricity sector, Energy Policy 45 (2012) 378–388.

[16] Y. Yang, Understanding household switching behavior in the retail electricity market, Energy Policy 69 (2014) 406–414.

[17] J. Kaenzig, S.L. Heinzle, R. Wüstenhagen, Whatever the customer wants, the customer gets? Exploring the gap between consumer preferences and default electricity products in Germany, Energy Policy 53 (2013) 311–322.

[18] Y. Yang, H. Solgaard, W. Haider, Value seeking, price sensitive, or green? Analyzing preference heterogeneity among residential energy consumers in Denmark, Energy Res. Soc. Sci. (2015) 15–28.

[19] AGEN-RS, Energy Agency, 1 June 2016. [Online]. Available: https://www.agen-rs.si/documents/54870/68629/Report-on-the-energy-sector-in-Slovenia-for-2015/f1302ae0-7267-4ae7-b74d-7ce8c4323043.

[20] P. Lewis, World Energy Retail Market Rankings 2012, VaasaETT, Helsinki, 2012.

[21] M. Dorotic, T.H. Bijmolt, P.C. Verhoef, Loyalty programmes: current knowledge and research directions, Int. J. Manag. Rev. 14 (2012) 217–237.

[22] L. Berry, Relationship marketing of service – growing interest, emerging perspective, J. Acad. Mark. Sci. 23 (1995) 236–245.

[23] A. Dick, K. Basu, Customer loyalty: toward an integrated conceptual framework, J. Acad. Mark. Sci. 22 (no. 2) (1994) 99–113.

[24] V.A. Zeithaml, L.L. Berry, A. Parasuraman, The behavioral consequences of service quality, J. Mark. 60 (1996) 31–46.

[25] R.N. Bolton, P. Kannan, M.D. Bramlett, Implications of loyalty program membership and service experiences for customer retention and value, J. Acad. Mark. Sci. 28 (2000) 95–108.

[26] P.C. Verhoef, Understanding the effect of customer relationship management efforts on customer retention and customer share, J. Mark. 67 (2003) 30–45.

[27] H.S. Bansal, S.F. Taylor, Y. St-James, Migrating to new service providers: toward a unifying framework of consumers switching behaviors, J. Acad. Mark. Sci. 33 (no. 1) (2005) 96–115.

[28] V.A. Zeithaml, M.J. Bitner, Services Marketing, McGraw-Hill, New York, 1996.

[29] J. Cronin, S. Taylor, Measuring service quality: a reexamination and extension, J. Mark. 56 (no. 3) (1992) 55–88.

[30] American Marketing Association, Marketing Power, Dictionary, Frequent Shopper Program 1 (1995), p. 1 [Online]. Available: http://www.marketingpower.com/_layouts/dictionary.aspx?dLetter=F (Accessed 20 July 2018).

[31] Consumer Reports, Points Mania vol. 73, Consumer Reports, 2008, pp. 12–13.

[32] M. Gable, S. Fiorito, M. Topal, An empirical analysis of the components of retailer customer loyalty programs, Int. J. Retail. Distrib. Manag. 36 (2008) 32–49.

[33] J. Leenheer, H. van Heerde, T. Bijmolt, A. Smidts, Do loyalty programs really enhance behavioral loyalty? An empirical analysis accounting for selfselecting members, Int. J. Res. Mark. 24 (no. 1) (2007) 31–47.

[34] N. Demoulin, P. Zidda, Drivers of customers' adoption and adoption timing of a new loyalty card in the grocery retail market, J. Retail. 85 (2009) 391–405.

[35] A. Mimouni-Chaabane, P. Volle, Perceived benefits of loyalty programs: scale development and implications for relational strategies, J. Bus. Res. 63 (2010) 32–37.

[36] P. Steyn, L. Pitt, A. Strasheim, C. Boshoff, R. Abratt, A cross-cultural study of the perceived benefits of a retailer loyalty scheme in Asia, J. Retail. Consum. Serv. 17 (2010) 355–373.

[37] K. De Wulf, G. Odekerken-Schröder, M. de Canniere, C. Van Oppen, What drives consumers participation in loyalty programs? A conjoint analytical approach, J. Relatsh. Mark. 2 (2003) 69–83.

[38] A. Allaway, D. Berkowitz, G. D'Souza, Spatial difussion of a new loyalty program through a retail market, J. Retail. 79 (2003) 137–151.

[39] L. Meyer-Waarden, C. Benavent, Grocery retail loyalty program effects: self selection or purchase behavior change? J. Acad. Mark. Sci. 37 (2009) 345–358.

[40] B. Stauss, M. Schmidt, A. Schoeler, Customer frustration in loyalty program, Int. J. Serv. Ind. Manag. 16 (2005) 229–252.

[41] L. Meyer-Waarden, The influence of loyalty programme membership on customer purchase behaviour, Eur. J. Mark. 42 (2008) 87–114.

[42] J. Hansen, G. Deitz, R. Morgan, Taxonomy of service-based loyalty program members, J. Serv. Mark. 24 (2010) 271–282.

[43] M. Wendlandt, U. Schrader, Consumer reactance against loyalty programs, J. Consum. Mark. 24 (2007) 293–304.

[44] Y. Liu, The long-term impact of loyalty programs on consumer purchase behavior and loyalty, J. Mark. 71 (2007) 19–35.

[45] D. Kim, S. Lee, K. Bu, S. Lee, Do VIP programs always work well? The moderating role of loyalty, Psychol. Mark. 26 (2009) 590–609.

[46] P. Kopalle, S. Neslin, B. Sun, Y. Sun, V. Swaminathan, A dynamic structural model of the impact of loyalty programs on customer behavior, Working Paper, Dartmouth College: Tuck School of Business, 2006.

[47] P. Verhoef, J.A.D.M. van Doorn, Customer value management: an overview and research agenda, Market. J. Res. Manag. 2 (2007) 51–68.

[48] B. Roe, M. Teisl, A. Levy, M. Russel, US consumers' willingness to pay for green electricity, Energy Policy 29 (no. 11) (2001) 917–925.

[49] L. Meyer-Waarden, Effects of loyalty program rewards on store loyalty, J. Retail. Consum. Serv. (2015) 22–32.

[50] C. Grönroos, A service quality model and its marketing implications, Eur. J. Mark. 18 (no. 4) (1984) 36–44.

[51] B. Truffer, J. Markard, R. Wüstenhagen, Eco-labeling of electricity—strategies and tradeoffs in the definition of environmental standards, Energy Policy 29 (no. 11) (2001) 885–897.

[52] A. Parasuraman, L.L. Berry, V.A. Zeithaml, Understanding customer expectations of service, Sloan Manage. Rev. 32 (no. 3) (1991) 39–48.

[53] V. Zeithaml, Consumer perceptions of price, quality and value: a means-end model and synthesis of evidence, J. Mark. 52 (no. July) (1988) 2–22.

[54] D.R. Lichtenstein, N.M. Ridgway, R.G. Netemeyer, Price perceptions and consumer shopping behaviour : a field study, J. Mark. Res. 30 (no. 2) (1993) 234–245.

[55] A. Ravald, C. Grönroos, The value concept and relationship marketing, Eur. J. Mark. 30 (no. 2) (1996) 19–30.

[56] K. Eakin, A. Faruqui, Bundling value-added and commodity services in retail electricity markets, Electr. J. 13 (no. 10) (2000) 60–68.

[57] M.S. Bartlett, Internal and external factor analysis, Br. J. Psychol. Stat. Sect. (1948) 73–81.

[58] C. Distefano, M. Zhu, D. Mîndrilă, Understanding and using factor scores: considerations for the applied researcher. Practical assessment, Res. Eval. 14 (2009) 1–11.

[59] J.F. Hair, W.C. Black, B.J. Babin, R.E. Anderson, Multivariate Data Analysis, Pearson Education, Upper Saddle River, NJ, 2014.

[60] K.E. Train, Discrete Choice Methods with Simulation, Cambridge University Press, Cambridge, 2009.

[61] D. McFadden, Conditional logit analysis of qualitative choice behavior, Frontiers in Econometrics, Academic Press, Berkeley, California, 1974, pp. 105–142.

[62] W. Greene, Econometric Analysis, 6th ed., Prentice Hall International, Inc., New Jersey, 2008.

[63] SORS, SI Stat, [Online]. Available: Statistical Office of the Republic of Slovenia, 2016 (Accessed 2017), http://pxweb.stat.si/pxweb/dialog/statfile2.asp.

[64] A. Parasuraman, V. Zeithaml, L. Berry, SERVQUAL: a multiple-item scale for measuring consumer perceptions of service quality, J. Retail. 64 (no. 1) (1988) 12–40.

[65] R Core Team, R: A Language and Environment for Statistical Computing, R Foundation for Statistical Computing, 2016.

[66] Y. Croissant, Mlogit: Multinomial Logit Model, (2013).

[67] T.A. Brown, Confirmatory Factor Analysis for Applied Research, Guilford Press, New York, 2006.

[68] J. van Doorn, P. Verhoef, T. Bijmolt, The importance of non-linear relationships between attitude and behaviour in policy research, J. Consum. Policy 30 (2007) 75–90.